

REMARKS

By this amendment, Applicants have amended the claims to more clearly define their invention. In particular, Applicants have amended claims 1 and 16 to recite that the heating device has at least first and second plate-like ceramic elements and that, on one side of the heating element, at least one flat electrical conductor is provided, while, on other flat side of the heating elements, at least two further flat electrical conductors are provided, each of the further flat electrical conductors being in contact with a respective one of the first and second heating elements. See, e.g., Figures 5-7.

Claims 1, 2, 9 and 10 stand rejected under 35 U.S.C. 102(b) as allegedly being anticipated by U.S. patent number 4,841,127 to Prager et al. Applicants traverse this rejection and request reconsideration thereof.

The present invention relates to a heating device. As shown, by way of example, only in Figure 5, the heating device 1 includes at least first and second plate-like ceramic heating elements 6.1, 6.2. The heating elements 6.1, 6.2 are electrically connected on opposite flat sides. For example, the heating elements 6.1, 6.2 may engage directly with a flat side 6.1a, 6.2a on the upper cover surface 2b of the casing 2. On another flat side of the heating elements 6.1, 6.2, there are at least two further flat electrical conductors 5.1, 5.2. For example, one of the electrical conductors 5.1 can be contact with another flat side of one of the heating elements 6.1, while another electrical conductor 5.2 can be contact with the heating element 6.2 (directly or, in the case shown in Figure 5, through a conductor spacer 7.2 and/or a contact plate 5.3). In this matter, the first heating element 6.1 and the second

heating element 6.2 can be separately supplied with a voltage so that one or both of the first and second elements 6.1, 6.2 can be heated.

The Prager et al. patent discloses a dual temperature hair curler which has a hollow heat transmitting metallic barrel enclosing a pair of PTC heaters connected in series to each other and electrically insulated from the barrel by an oxide-filled silicon rubber material. As shown in Figures 1A and 1B of Prager et al., lead-in wires 4 extend inside of the barrel to PTC heater 2a while lead-in wires 5 extend to PTC heater 2b. Each of the sets of lead-in wires 4 and 5 are welded to opposite sides of the PTC heaters 2a and 2b. Thus, the Prager et al., as shown in Figure 1A and as described at column 3, lines 17-28 utilizes lead-in wires not flat electrical conductors, as presently claimed. Lead-in wires generally have a circular construction and are not flat conductors as are used in the heating device of the present invention. Accordingly, the Prager et al. patent does not disclose the presently claimed invention.

Claims 1, 3-5, 10, 13, and 16-18 stand rejected under 35 U.S.C. 102(b) as allegedly being anticipated by U.S. patent number 5,658,479 to Tadokoro. Applicants traverse this rejection and request reconsideration thereof.

The Tadokoro patent discloses a positive temperature coefficient thermistor heater composed of a positive temperature coefficient thermistor element, and electrodes formed on both principal faces of the thermistor element. At least one of the electrodes consists of split electrodes. While it is disclosed that a plurality of PTC thermistor heaters 2 can be used, the terminals that electrically connect the heaters 2 appear to connect with all of the heaters 2. That is, a first terminal 3 makes electrical connection through the first case 6 with the first electrodes 22 on

one side of the heaters 2, while power supply terminals 9, 10 are brought into contact with the second electrodes 23 and 24 of the heaters 2. Thus, whereas the present invention uses 2 further flat electrical conductors each one of which is an electrical contact with respect one of the heating elements, the terminals 9, 10, as well as the terminal 3 of Tadokoro appears to contact all of the heating elements 2. Therefore, the Tadokoro patent does not anticipate the presently claimed invention.

Claims 6 and 7 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Tadokoro in view of Nanerth. Applicants traverse this rejection and request reconsideration thereof.

The patent to Nauerth discloses an electrical resistance-heating element having at least one heating conductor of positive-temperature-coefficient material having contact means on opposite surfaces. If more than one heating element is provided, they may be arranged in a row or in a stack. Electrical connection is made to the heating conductor or the row or stack through two substantially plane contact plates adapted to the layout of the heating conductor, row or stack and placed loosely upon opposite contact surfaces thereof. The components are held together elastically by securing means holding the edges of the contact plates. However, nothing in Nauerth remedies the basic deficiencies of Tadokoro noted above.

Therefore, claims 6 and 7 are patentable over the proposed combination of patents.

Claim 14 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Tadokoro in view of Van Bokestal et al. Applicants traverse this rejection and request reconsideration thereof.

The Examiner has cited the Van Bokestal et al. patent as disclosing heat elements comprising conductors and spacers encased in a molded insulating frame.

However, nothing in Van Bokestal et al. would remedy any of the basic deficiencies noted above with respect to Tadokoro. Accordingly, claim 14 is patentable over the proposed combination of references.

Claim 15 also stands rejected under 35 U.S.C. 103(a) as being unpatentable over Tadokoro in view of Van Bokestal et al. Applicants traverse this rejection and request reconsideration thereof.

The rejection of claim 15 is traversed for the reasons noted above with respect to claim 14. Moreover, the Examiner has not set a *prima facie* case of obviousness since the Examiner has not set forth the teachings in Tadokoro and Van Bokestal et al. which would have suggested the presently claimed invention and has not provided a line of reasoning as to why it would have been obvious to make the modifications noted by the Examiner. Accordingly, claim 15 is patentable for this additional reason.

Claim 8 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Tadokoro et al. Applicants traverse this rejection and request reconsideration thereof.

The Tadokoro does not disclose or would not have suggested the invention for the reasons set above. Moreover, the Examiner's allegation that the inclusion of an insulating spacer between two conductors is a matter of design choice does not meet the requirements for properly supporting an obviousness rejection with evidence. Accordingly, is patentable over Tadokoro for this additional reason.

In view of the foregoing comments and amendments, favorable reconsideration and allowance of all claims presently in the application, are requested.

321.43752X00

Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to the Antonelli, Terry, Stout & Kraus, LLP Deposit Account No. 01-2135 (Docket No. 321.43752X00), and please credit any excess fees to such Deposit Account.

Respectfully submitted,

ANTONELLI, TERRY, STOUT & KRAUS, LLP

By _____


Alan E. Schiavelli
Reg. No. 32,087

1300 North Seventeenth Street, Suite 1800
Arlington, Virginia 22209
Telephone: (703) 312-6600
Facsimile: (703) 312-6666
AES/sjg